

IN THE CLAIMS:

Please cancel claims 1-26.

Kindly add the following new claims 27-55:

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27. A semiconductor package comprising:
a first semiconductor having at least one upper face electrode on an upper face of said first semiconductor, and a lower face electrode on a lower face of said first semiconductor;

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a heat radiating plate having a surface to which is joined said lower face electrode via a joining member; and

projecting electrodes joined to said at least one upper face electrode and said heat radiating plate, respectively, with leading ends of said projecting electrodes being exposed so as to constitute electric connecting parts.

28. The semiconductor package according to claim 27, wherein said projecting electrodes are columnar or spherical in shape.

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29. The semiconductor package according to claim 28, further comprising a sealing resin covering said first semiconductor and said surface of said heat radiating plate, but not covering said leading ends of said projecting electrodes.

30. The semiconductor package according to claim 28, further comprising a second semiconductor having at least one upper face electrode on an upper face of said second semiconductor, and a lower face electrode on a lower face of said second semiconductor,

with said second semiconductor being the same as said first semiconductor and with said lower face electrode of said second semiconductor being joined to said heat radiating plate via a joining member, and

67 wherein said heat radiating plate comprises ceramic and has an electric circuit of equal polarity formed from at least one of gold, silver, copper, nickel and tungsten, with said electric circuit being on said ceramic and with said first and second semiconductors being joined to said electric circuit.

A1 31. The semiconductor package according to claim 28, further comprising a second semiconductor having at least one upper face electrode on an upper face of said second semiconductor, and a lower face electrode on a lower face of said second semiconductor, with said second semiconductor being different from said first semiconductor and with said lower face electrode of said second semiconductor being joined to said heat radiating plate via a joining member, and

wherein said heat radiating plate comprises ceramic and has electric circuits of independent polarities formed from at least one of gold, silver, copper, nickel and tungsten, with said electric circuits being on said ceramic and with said first and second semiconductors being joined to said electric circuits, respectively.

32. The semiconductor package according to claim 28, wherein said heat radiating plate has a circuit for said first semiconductor and said projecting electrodes, with said circuit being formed from at least one of gold, silver, copper, nickel and tungsten and being provided on a front surface of said heat radiating plate, and

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said heat radiating plate comprises ceramic layers separated by a conductive layer that is of a material equal to a material of said lower face electrode, with said conductive layer being connected to said circuit such that heat of said first semiconductor is to be radiated by said ceramic layers and said conductive layer.

33. The semiconductor package according to claim 28, wherein said heat radiating plate comprises at least one of copper, a copper alloy, aluminum and an aluminum alloy, with or without being subjected to a surface treatment.

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34. The semiconductor package according to claim 28, wherein said leading ends of said projecting electrodes are exposed by covering said projecting electrodes with a sealing resin and then simultaneously removing a portion of said sealing resin and a portion of said projecting electrodes.

35. The semiconductor package according to claim 28, wherein said leading ends of said projecting electrodes extend to a uniform height relative to one another by being smoothly pressed.

36. The semiconductor package according to claim 28, wherein each of said projecting electrodes comprises an inner portion and an outer portion, with said inner portion being of a hardness that is different than a hardness of said outer portion.

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37. The semiconductor package according to claim 28, wherein each of said projecting electrodes comprises an inner portion and an outer portion, with said inner portion having a melting temperature that is different than a melting temperature of said outer portion.

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38. The semiconductor package according to claim 28, further comprising a second semiconductor having at least one upper face electrode on an upper face of said second semiconductor, and a lower face electrode on a lower face of said second semiconductor, with said second semiconductor being different from said first semiconductor, with said lower face electrode of said second semiconductor having current and voltage characteristics that are equal to current and voltage characteristics of said lower face electrode of said first semiconductor, and with said lower face electrode of said second semiconductor being joined to said heat radiating plate via a joining member as is said lower face electrode of said first semiconductor such that said first and second semiconductors are mounted on said heat radiating plate.

39. The semiconductor package according to claim 28, wherein said heat radiating plate includes pits and projections on a surface that is opposite said surface to which said lower face electrode is joined.

40. The semiconductor package according to claim 28, further comprising bumps between said at least one upper face electrode and one of said projecting electrodes joined to said at least one upper face electrode.

41. The semiconductor package according to claim 27, wherein said leading ends of said projecting electrodes are substantially equally spaced relative to one another from said surface of said heat radiating plate.

42. The semiconductor package according to claim 41, wherein said projecting electrodes are columnar or spherical in shape.

AI 43. The semiconductor package according to claim 41, further comprising a sealing resin covering said first semiconductor and said surface of said heat radiating plate, but not covering said leading ends of said projecting electrodes.

44. The semiconductor package according to claim 41, further comprising a second semiconductor having at least one upper face electrode on an upper face of said second semiconductor, and a lower face electrode on a lower face of said second semiconductor, with said second semiconductor being the same as said first semiconductor and with said lower face electrode of said second semiconductor being joined to said heat radiating plate via a joining member, and

wherein said heat radiating plate comprises ceramic and has an electric circuit of equal polarity formed from at least one of gold, silver, copper, nickel and tungsten, with said electric circuit being on said ceramic and with said first and second semiconductors being joined to said electric circuit.

45. The semiconductor package according to claim 41, further comprising a second semiconductor having at least one upper face electrode on an upper face of said second semiconductor, and a lower face electrode on a lower face of said second semiconductor,

with said second semiconductor being different from said first semiconductor and with said lower face electrode of said second semiconductor being joined to said heat radiating plate via a joining member, and

wherein said heat radiating plate comprises ceramic and has electric circuits of independent polarities formed from at least one of gold, silver, copper, nickel and tungsten, with said electric circuits being on said ceramic and with said first and second semiconductors being joined to said electric circuits, respectively.

46. The semiconductor package according to claim 41, wherein

said heat radiating plate has a circuit for said first semiconductor and said projecting electrodes, with said circuit being formed from at least one of gold, silver, copper, nickel and tungsten and being provided on a front surface of said heat radiating plate, and

said heat radiating plate comprises ceramic layers separated by a conductive layer that is of a material equal to a material of said lower face electrode, with said conductive layer being connected to said circuit such that heat of said first semiconductor is to be radiated by said ceramic layers and said conductive layer.

47. The semiconductor package according to claim 41, wherein said heat radiating plate comprises at least one of copper, a copper alloy, aluminum and an aluminum alloy, with or without being subjected to a surface treatment.

48. The semiconductor package according to claim 41, wherein said leading ends of said projecting electrodes are exposed by covering said projecting electrodes with a sealing resin and then simultaneously removing a portion of said sealing resin and a portion of said projecting electrodes.

49. The semiconductor package according to claim 41, wherein said leading ends of said projecting electrodes are substantially equally spaced relative to one another from said surface of said heat radiating plate by being smoothly pressed.

AI 50. The semiconductor package according to claim 41, wherein each of said projecting electrodes comprises an inner portion and an outer portion, with said inner portion being of a hardness that is different than a hardness of said outer portion.

51. The semiconductor package according to claim 41, wherein each of said projecting electrodes comprises an inner portion and an outer portion, with said inner portion having a melting temperature that is different than a melting temperature of said outer portion.

52. The semiconductor package according to claim 41, further comprising a second semiconductor having at least one upper face electrode on an upper face of said second semiconductor, and a lower face electrode on a lower face of said second semiconductor, with said second semiconductor being different from said first semiconductor, with said lower face electrode of said second semiconductor having current and voltage characteristics that are equal to current and voltage characteristics of said lower face electrode of said first semiconductor, and with said lower face electrode of said second semiconductor being joined to said heat radiating plate via a joining member as is said lower

face electrode of said first semiconductor such that said first and second semiconductors are mounted on said heat radiating plate.

53. The semiconductor package according to claim 41, wherein said heat radiating plate includes pits and projections on a surface that is opposite said surface to which said lower face electrode is joined.

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end 54. The semiconductor package according to claim 41, further comprising bumps between said at least one upper face electrode and one of said projecting electrodes joined to said at least one upper face electrode.

55. The semiconductor package according to claim 27, wherein said joining member comprises one of solder and conductive paste, with said one of solder and conductive paste being in contact with said lower face electrode.
